Mitigating CRS in CAR T-cell Therapy: Real World Outcomes of Prophylactic Tocilizumab Administration

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Introduction

- Single arm studies with anti CD19 CAR-T cell therapy:
  - Prophylactic tocilizumab reduces incidence and severity of CRS
  - No impairment in disease control or long-term efficacy
  - No increase in neurologic toxicity
  - No effect on CAR-T cell expansion or persistence
- Similar results with cohort 3 of ZUMA-1 trial
- Very limited RCT data

Aim

Evaluate OS and CRS incidence with vs. without prophylactic tocilizumab in patients receiving CAR-T cell therapy

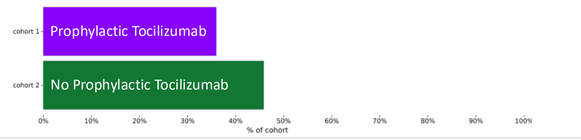
Methods

- Retrospective cohort study using TriNetX
- Cohorts: patients who received CAR T-cell therapy with prophylactic tocilizumab vs without prophylactic tocilizumab
- 1:1 Propensity score matched for age, sex, race, heart failure, ischemic heart disease, hypertension, obesity, diabetes mellitus, chronic lung disease, and type of CAR T-cell therapy
- Index event: CAR T-cell infusion date
- Primary outcome: incidence of CRS of any grade
- Secondary outcome: all-cause mortality

Results

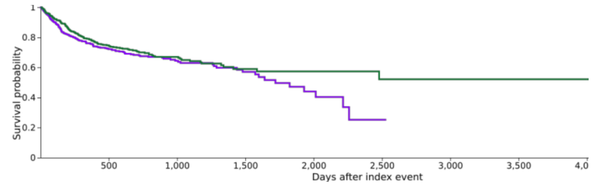
- N= 586 after PSM
- CRS of any grade CRS
  - Risk Ratio: 0.78 (95% CI: 0.68–0.90, p=0.001)

	Patients in cohort	Patients with CRS	Risk
Prophylactic Tocilizumab	586	211	36%
No Prophylactic Tocilizumab	586	269	45.9%



- Survival analysis
  - HR 1.19 (95% CI: 0.96–1.49, p=0.907)

	With Prophylactic Tocilizumab	Without Prophylactic Tocilizumab	P-value
Median OS (days)	1720	-	0.119
Survival probability	25.21%	52.16%	0.907



Discussion

- Prophylactic tocilizumab lowered CRS rates
- Lower survival probability with prophylactic tocilizumab was not statistically significant.
- Further evaluation with RCT warranted